

This last work was undoubtedly based to a considerable extent on the previous work of Johnson. No definite conclusions were offered. It is interesting to note that in the plates, which are very well done as a whole, the anthers are depicted with almost pore-like openings rather than longitudinal slits.

Toward the end of the nineteenth century botanists in general accepted *Visnea* as belonging to the Theaceae. Szyszylowicz (1895) and Melchior (1925), in their respective treatments of the family in *Die Natürliche Pflanzenfamilien*, both placed *Visnea*, without reservation, in the Theaceae. They placed it in the tribe Ternstroemieae along with *Adinandra*, *Ternstroemia*, and *Eurya*.

Most botanists, it seems, have interpreted the ovary as inferior or half-inferior. This interpretation stems from the fact that the persistent calyx-lobes are joined at the base, and in the development of the fruit this fused basal portion of the calyx is adnate to the side of the fruit. This appears very much like an inferior ovary, except that the fruit, when dissected longitudinally, shows a clean demarkation from the calyx-lobes in the line and character of the pericarp, which is distinct and not fused with the calyx.

In the flower, the ovary appears to be placed on the torus formed with the base of the connate calyx-lobes, but retains its individual identity. Some authors have described the ovary as projecting "lightly" into the torus. I could detect no projection into the torus from the dissections I made and studied. It does appear, however, that in the development of the fruit and the persistent calyx, the base of the fruit does project somewhat into the torus, but, as I mentioned above, retains its individuality.

Visnea Linnaeus f., *Suppl. Pl.* 36. 1781. — Endlicher, *Gen. Pl.* 1018. 1840; *Suppl.* 2, 81. 1842. — Webb & Berthelot, *Hist. Nat. Iles Canar.* 3 (2): 144. 1842. — Choisy in *Mém. Soc. Phys. Hist. Nat. Genève* 14: 130 (*Mém. Ternstr.* 42). 1855. — Johnson in *Hookers Jour. Bot.* 9: 161. 1857. — Schacht in *Denkschr. Bot. Ges. Regensburg* 4: 47–60, *t.* 1, 2. 1859. — Bentham & Hooker, *Gen. Pl.* 1: 182. 1862. — Baillon, *Hist. Pl.* 4: 257. 1873. — Szyszylowicz in *Nat. Pflanzenfam.* III. 6: 190. 1895. — Hubbard in *Bailey, Stand. Cyclop. Hort.* 6: 3480. 1917. — Engler in *Veg. Erde [Pflanzenwelt Afr.* 3 (2)] 9: 494. 1921. — Melchior in *Nat. Pflanzenfam.* ed. 2, 21: 145. 1925. — Lemée, *Dict. Pl. Phan.* 6: 877. 1935.

Mocanera Jussieu, *Gen. Pl.* 318. 1789. — Lamarck, *Encycl.* 4: 208. 1797. — Jussieu in *Dict. Sci. Nat.* 31: 504. 1824. — Non *Mocanera* Blanco, *Fl. Filip.* 446–451, 858. 1837.

Flowers axillary, hermaphroditic. Bracteoles 2. Sepals 5, imbricate, connate at the base forming a shallow tube adnate to the base of the ovary. Petals 5, imbricate, connate at the base. Stamens 12 [–21], adhering to the base of the corolla; filaments free; anthers basifixed, erect. Ovary 3-celled, lightly immersed in the torus; ovules few in each cell, pendant

from the apex; styles 3, distinct, persistent. Fruit baccate, indehiscent, projecting into the torus, nearly enclosed and adjoined near the base by the persistent calyx, *appearing* subinferior. Seeds small, pyriform, 3-angled, the embryo curved, cylindrical, the albumen pulpy.

Evergreen trees with small flowers.

TYPE SPECIES: *Visnea mocanera* Linn. f.

DISTRIBUTION: Canary Islands and Madeira.

Visnea mocanera Linnaeus f., Suppl. Pl. 251. 1781. — Willdenow, Sp. Pl. 2: 926. 1800. — Bory de St.-Vincent, Essai Iles Fortunées 327, t. 7. 1804. — Colla, Hort. Repul. 146, t. 32. 1824. — Sprengel, Syst. Veg. 2: 465. 1825. — Hooker, Icon. Pl. 3: t. 253. 1840. — Walpers, Repert. Bot. Syst. 1: 368. 1842. — Webb & Berthelot, Hist. Nat. Iles Canar. 3 (2): 145, t. 69 B. 1842-44. — Choisy in Mém. Soc. Phys. Hist. Nat. Genève 14: 130 (Mém. Ternstr. 42). 1855. — Walpers, Ann. Bot. Syst. 7: 360. 1868. — Johnson, Handb. Madeira 220. 1885. — Nicholson, Illustr. Dict. Gard. 4: 185, f. 200, 1886. — Szyszyłowicz in Nat. Pflanzenfam. III. 6: 190. 1895. — Thonner, Blütenfl. Afr. t. 99. 1908; Fl. Pl. Afr. t. 98. 1913. — Pitard & Proust, Fl. Iles Canar. 134. 1908. — Menezes, Fl. Arch. Madeira 30. 1914. — Hubbard in Bailey, Stand. Cyclop. Hort. 6: 3480. 1917. — Knoche, Vagandi Mos (Die Kanarische Ins.) 220, t. 17. 1923. — Melchior in Nat. Pflanzenfam. ed. 2, 21: 145. 1925. — Lindiger, Beitr. Kennt. Veg. Fl. Kanar. Ins. 278. 1926.

Mocanera canariensis Heynhold, Nom. Bot. Hort. 1: 884. 1840, *nom. nud.* — Jaume St.-Hilaire, Expos. Fam. Nat. 2: 371. 1805. — Jussieu in Dict. Sci. Nat. 31: 505. 1824.

Small tree or shrub. Branches brown or grayish brown, terete, glabrous, lenticellate, the young branchlets brown, angled, pubescent when very young. Leaves coriaceous, subelliptic-obovate, 4-7 cm. long, 2-2.5 cm. wide, glabrous (except when very young), acute at the apex, cuneate at the base, the margin subrevolute, serrulate along the upper half, a gland (quickly caducous) to each serration, the veins obscure on both surfaces, occasionally visible below, the midrib 2-3 (-4) mm. long. Flowers axillary, solitary or in twos, occasionally in fascicles of three; pedicel terete, 7-8 mm. long, lightly pubescent at anthesis (lens); bracteoles 2, ovate or long-deltoid, unequal, 1.25-1.5 mm. long, one bracteole immediately below the calyx, the other disposed along the pedicel away from the calyx, rarely opposite; calyx-lobes 5, imbricate, coriaceous, persistent, unequal, glabrous (lightly pubescent at anthesis), 3-5 mm. long, 2.5-2.75 mm. wide, joined at the base for 1.5-2 mm. forming a torus; corolla-lobes 5, imbricate, obtuse, membranaceous, 5-6.5 mm. long, 3.5-4 mm. wide, joined at the very base; stamens ca. 13 [-21], ca. 4 mm. long, unequal, the filament ca. 3 mm. long, free, lightly adnate to the base of the corolla, the anthers long-ovate ca. 1 mm. long, projected into an apicule; ovary subglobose to conical, lightly imbedded in the torus, ca. 1.5 mm. diameter,

sulcate and glabrous near the base, densely pubescent above, 3-celled, the ovules few, the styles 3, filiform, persistent, ca. 3 mm. long, free nearly to the base, pubescent, the stigmas punctiform. Fruit baccate, indehiscent, conical, crowned by the persistent styles, during development projecting more deeply into the torus, the cells often indistinguishable, appearing one-celled, crowded with pulp, 1-4-seeded, others abortive. [Seeds 3-angled pyriform, acute, the testa glutinous-granulate].

CANARY ISLANDS: TENERIFFE: above Taganana, in forest, alt. 900 m., *A. Engler s.n.* (AA). — "Cruz de Taganana, Cumbre, in rupibus," alt. 900 m., *J. Bornmüller 927* (AA), June 14, 1900. — Guinar, river ravine, alt. 700-800 m., *O. Burchard 62* (AA), Feb. 1904. — Guinar, river ravine, alt. 500 m., *J. Bornmüller 2588* (AA), Sept. 6, 1901. — In woods, *C. Bolle s.n.* (G), in 1851. PALMA: near Breña Baja, Montagneta, alt. 500 m., *J. Bornmüller 2586* (AA), May 10, 1901. FERRO: El Golfo, Vueltas above the church, *R. T. Lowe H 178* (G), Feb. 18, 1858. — Risco de Jinama, alt. 500-600 m., *J. Bornmüller 2589* (AA), May 17, 1901.

MADEIRA: Ribeiro do Inferno, *W. Barbey 908* (G), Dec. 16, 1858.

CULTIVATED: T e n e r i f f e : Oratava, in garden, *J. Bornmüller 925* (AA), July 1900. — F r a n c e : Antibes (Alpes-Maritimes), Villa Thuret (AA), Mar. 12 & Apr. 10, 1889.

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THE GENUS AMENTOTAXUS

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Amentotaxus is a coniferous genus, of isolated position, endemic to eastern Asia; there are considerable differences of opinion regarding its proper phylogenetic alliance. The genus has long been considered monotypic. Its species, *A. argotaenia* (Hance) Pilger, was first proposed as a species of *Podocarpus*, having been based on sterile material. Later Pilger transferred it to *Cephalotaxus* (in Engler, Pflanzenr. IV. 5: 104. 1903), but it was subsequently referred to a separate genus by him (in Bot. Jahrb. 54: 41. 1916) because of its very distinct long staminate inflorescences. In Pilger's system of 1926 (Engler & Prantl, Nat. Pflanzenfam. ed. 2. 13: 267. 1926), *Amentotaxus* is placed in the Cephalotaxaceae, the only other genus of which is *Cephalotaxus*. As *Amentotaxus* is very different from *Cephalotaxus*, Kudo and Yamamoto (in Jour. Soc. Trop. Agr. Formos. 3: 110. 1931) proposed for it the monotypic family Amentotaxaceae. Florin (Palaeontographica 85, Abt. B: 625-630. 1944; Bot. Gaz. 110: 31-39. 1948), however, is of the opinion that *Amentotaxus* is not closely related to the Cephalotaxaceae but rather to the Taxaceae. Accordingly, in the latest system of classification of the conifers by Janchen (in Sitz. Oest. Akad. Wiss. Math.-Nat. Kl. Abt. I. 1949(3): 155-162. 1950), it is placed with *Torreya* in the tribe Torreyae of the Taxaceae, while *Cephalotaxus* is considered as representing the monotypic family Cephalotaxaceae. On the basis of both the vegetative and reproductive structures, this disposition is probably the most commendable.

The varied opinions regarding its phylogenetic position show that *Amentotaxus* is of great morphological interest. Also of considerable interest is its geographical distribution. First discovered around Hongkong and in Kwangtung, in southern China, the genus was subsequently reported to occur in southern Formosa, western Hupeh and Szechuan, southern Yunnan, and Tonkin. These later records all attribute the plants from these widely separated localities to a single species. In all cases, the authors recording these findings have apparently studied only local material, and a comprehensive review of the genus, with specimens representative of all localities, has never been made. Although the number of specimens from the different localities now available is still rather few and in some cases inadequate, apparently due to the plants being of rare occurrence, a study shows that the genus is not monotypic, but is rather composed of several distinct entities, each possessing distinct morphological characteristics and an exclusive as well as isolated and restricted range. In other coniferous genera with similar disjunct ranges, such as *Taiwania*, the disjunction is found to be specific in nature. Plants of these remote locations have long been isolated and have undergone considerable